

apple computers



*The Personal
Computer*



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FOR IMMEDIATE RELEASE

APPLE COMPUTER'S MACINTOSH TO BE A MAIN ATTRACTION
AT WEST COAST COMPUTER FAIRE

SAN FRANCISCO, Calif.—March 20, 1984—Organizers of the West Coast Computer Faire, which opens here Thursday, anticipate Apple Computer's recently-introduced Macintosh computer to be a key attraction to the more than 45,000 people expected to attend the show.

From an 11-foot high model in Apple's booth to daily raffle prizes, the Macintosh promises to be highly visible. A number of official show activities, including hands-on sessions and educational and technical seminars, will feature the new computer.

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Macintosh-Related Activities for Faire Attendees

More than 3,000 people are expected to spend 30 minutes apiece with the new computer in a specially arranged "hands-on" demonstration room on the third floor of the San Francisco Civic Auditorium.

In addition, sponsors of the Faire are giving away one free Macintosh computer system each of the four days of the show. The prize package includes a Macintosh computer, MacWrite word processing software, MacPaint drawing software and a carrying case. Show attendees must register to become eligible for the drawing.

Apple Speakers

As part of the West Coast Computer Faire's All Star Days, Larry Tesler, one of the developers of Lisa technology, is giving a 30-minute presentation on the future of personal computer hardware and software. Both Apple's Lisa and Macintosh computers are based on Lisa technology, which includes such computer design innovations as a mouse pointer, overlapping windows and a bit-mapped screen display.

Prior to working for Apple, Tesler did research for Xerox PARC and the Stanford University Artificial Intelligence Laboratory. The All Star Days program features talks by a variety of computer industry leaders throughout the show's first three days.

Chris Espinosa, member of the Macintosh design team, is participating in the user interface/operating environment panel that is part of the Faire's educational forum series. Having joined Apple in early 1977 at age 14, Espinosa has written a number of Apple manuals, including The Apple II and Apple II Plus Reference Manuals. He was responsible for the production of the Macintosh user manual, training materials and technical documentation.

The three-hour forum discussion is one of ten non-technical seminars offered during the show to help educate computer novices. The user interface/operating environment seminar will include a discussion of the benefits of one user interface over another and how users can be educated to use them.

"User interface" is computer industry terminology for the way in which a user communicates with a computer and vice versa. The concept includes the commands understood by the computer, the way those commands are transmitted, such as through a keyboard, mouse, or touch-sensitive screen, and the way information is displayed, such as through multiple windows, icons and pull-down menus.

Activities for Developers

Apple will present separate technical seminars at the Faire to software and hardware companies interested in creating products for Apple's Macintosh and Lisa 2 series computers. The free seminar will be given twice during the four-day show and is open to representatives of any hardware or software company. The two-hour presentation will provide introductory technical information.



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FOR IMMEDIATE RELEASE

APPLE INTRODUCES MACINTOSH ADVANCED PERSONAL COMPUTER

CUPERTINO, Calif., January 24, 1984--Apple Computer today unveiled its much-anticipated Macintosh computer, a sophisticated, affordably priced personal computer designed for businesspeople, professionals and students in a broad range of fields. Macintosh is available in all dealerships now.

Based on the advanced, 32-bit architecture developed for Apple's Lisa computer, Macintosh combines extraordinary computing power with exceptional ease of use--in a unit that is smaller and lighter than most transportable computers. The suggested retail price for Macintosh is \$2,495, which during the introductory period also includes a word-processing program and graphics package.

Macintosh, along with three powerful new Lisa 2 computers, forms the basis of the Apple 32 SuperMicro family of computers. All systems in the family run Macintosh software.

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Like Apple's ground-breaking Lisa computer, Macintosh uses its built-in user-interface software and high-resolution display to simulate the actual desk-top working environment--complete with built-in notepads, file folders, a calculator and other office tools. Every Macintosh computer contains 64 kilobytes of read-only memory (ROM), built-in Lisa Technology and 128 kilobytes of random-access memory (RAM) that support these desk-top tools.

Users tell Macintosh what to do simply by moving a "mouse"--a small pointing device--to select among functions listed in menus and represented by pictorial symbols on the screen. Users are no longer forced to memorize the numerous and confusing keyboard commands of conventional computers. The result is radical ease of use and a significant reduction in learning time. In effect, the Macintosh is a desk-top appliance offering users increased utility and creativity with simplicity.

"We believe that Lisa Technology represents the future direction of all personal computers," said Steven P. Jobs, Chairman of the Board of Apple. "Macintosh makes this technology available for the first time to a broad audience--at a price and size unavailable from any other manufacturer. By virtue of the large amount of software written for them, the Apple II and the IBM PC became the personal-computer industry's first two standards. We expect Macintosh to become the third industry standard."

A wide range of software applications will be supplied by leading independent software companies. Currently, more than 100 companies are developing software and hardware peripheral devices for Macintosh. The popular Lotus 1-2-3 integrated business package will be available in a Macintosh version, and Microsoft's Multiplan financial-planning application is available immediately.

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Two Macintosh application programs--one for word processing and one for graphics--also are available from Apple immediately and will be offered at no charge to anyone purchasing Macintosh during the first 100 days after introduction. These software packages will be followed by communications software, business productivity tools and programming languages that will allow Macintosh to gain access to data from large mainframe computers.

Twenty-four of the nation's leading universities, such as Harvard, Princeton, Stanford and Yale, have joined forces with Apple to plan and implement personal-computer applications over the next few years. (See accompanying Apple University Consortium press release.) Under terms of the new Apple University Consortium, each member will purchase more than \$2 million of Apple products (mostly Macintosh computers) over the next three years for use by faculty and students. Members of the consortium may share courseware (educational software) and application developments with one another in accordance with the agreement.

The prestigious accounting firm of Peat, Marwick Mitchell and Co. has ordered more than 2,000 Macintosh computers to be delivered in 1984.

Based on these commitments, Apple expects demand to exceed supply for several months.

Apple is manufacturing the new computers in a recently opened, highly automated factory in Fremont, California, which is capable of producing one system every 27 seconds and therefore meeting what is expected to be a large demand.

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Macintosh Slashes Computer Learning Time

Macintosh is aimed at a broad group of businesspeople, professionals and college students. These people perform tasks that are similar in one important respect: they all involve working at a desk and transforming information and ideas into memos, reports, budgets, plans and analyses.

The U.S. Bureau of Labor Statistics estimates that while there are 25 million of these "knowledge workers" in the United States alone, only 5 percent currently use desk-top computers. Apple market research indicates that the majority are unable or unwilling to invest the 20 to 40 hours it takes to master conventional computers and the additional three to 10 hours' learning time required for each new application program.

Macintosh, by contrast, typically takes only a few hours to learn. Its operation mirrors the activities that are carried on by people at their desks. Papers can be shuffled on screen, documents revised or discarded, charts drawn--all with a few simple commands executed with the mouse. Several documents can be displayed on screen simultaneously, in "windows" that can be moved, expanded or shrunk. All applications, from financial-planning tools to graphics programs, are based on the same set of intuitive operations. This means that numbers, words and pictures can be easily "cut" from memos, charts or graphs and "pasted" into other documents--even those created in separate application programs produced by different software companies.

"Macintosh easily fits on a desk, both in terms of its style of operation and its physical design," said Jobs. "It takes up about the same amount of desk space as a piece of paper. With Macintosh, the computer is an aid to spontaneity and originality, not an obstacle. It allows ideas and relationships to be viewed in new ways. Macintosh enhances not just productivity, but also creativity."

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Macintosh Sales Outlook

According to industry analyst Jean Yates, of Yates Ventures in Palo Alto, California, worldwide sales of Macintosh could total 350,000 units this year, with 70 percent of sales going to businesses, 20 percent to colleges and universities and 10 percent to home users. Many office users are expected to carry Macintosh computers home for work, and this is expected to fuel home sales as family members and others are exposed to the computer.

Aaron Goldberg, of International Data Corp., (IDC), in Santa Clara, California, said, "There's no doubt Apple has a winner with this product. The market has been waiting for this combination of technology, ease of operation and price."

Support From Leading Software

Apple expects 90 percent of all Macintosh software to come from independent software vendors. Among the prominent companies working on Macintosh applications are Microsoft Corp., Lotus Development, and Software Publishing Corp. (See list attached to software-support press release.)

Apple is supporting these efforts by providing independent software vendors with Macintosh computers and comprehensive open-architecture programming documentation, classes and other development support from Apple representatives. Apple foresees at least 500 software packages available for Macintosh by the end of 1984, including productivity applications, communications packages, educational tools, specialized applications (such as accounting packages) and games.

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Apple is currently providing two application programs for the Macintosh: MacWrite and MacPaint. MacWrite is a versatile word-processing program that features multiple fonts and font sizes, search-and-replace functions and the ability to cut text and pictures from other programs and paste them into memos or reports. MacPaint is a powerful illustration graphics program. Users can choose from an array of tools, such as brushes, pencils and erasers, and a large selection of textures and shapes to create an endless variety of free-form and structured images.



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FOR IMMEDIATE RELEASE

NEW LISA MODELS EXPAND APPLE'S 32-BIT SUPERMICRO FAMILY

CUPERTINO, Calif., January 24, 1984--Apple Computer today introduced its Lisa 2 series--three new higher-performance versions of its pioneering Lisa computer. Ranging in price from \$3,495 to \$5,495, the expanded Lisa 2 computers give users more flexibility in both memory and mass storage. Together with the new Macintosh, the Lisa 2 series forms the basis of the Apple 32 Supermicro (TM) family of advanced desktop computers.

The Lisa 2 series is comprised of three models: Lisa 2, Lisa 2/5 and Lisa 2/10. Lisa 2 has 512 kilobytes of internal memory and a 3 1/2-inch microdisk drive for mass storage. The Lisa 2/5 and 2/10 share these features, but offer additional mass storage. The 2/5 has an external 5-megabyte hard disk; the 2/10 has a built-in, 10-megabyte hard disk. Each computer in the Lisa 2 series can run programs designed for Apple's new Macintosh, as well as Lisa software.

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"Lisa 2 series computers will be ideal for the professional needing a personal productivity tool," said Warren Winger, Chairman of the Board of CompuShop, a chain of 40 retail computer stores. "Additional mass storage capabilities can easily be added, and Lisa's compatibility with Macintosh will offer users a multitude of excellent software from which to choose."

For owners of the original Lisa, Apple is offering two upgrade options. Users can have their Lisas upgraded to a Lisa 2/5 free of charge until June 1, 1984 (after which time the upgrade will cost \$595), or they can upgrade their Lisas to a 2/10 for \$2,495.

The Apple 32 Supermicro System Family

Apple's Lisa 2 series and the new Macintosh are part of an expanded family of products incorporating Lisa Technology--a 32-bit microprocessor, high-resolution graphics and a "mouse" pointing device. From the \$2,495 Macintosh to the high-end Lisa 2/10 (at \$5,495), Apple's 32 Supermicro System family offers wide flexibility in price and performance.

All of the new Lisa 2 computers are equipped with the same compact 3 1/2-inch microdisk drive used by Macintosh. An upgraded operating system and the faster speed of the 3 1/2-inch microdisks increase the performance of the Lisa 2 computers two to three times the speed of the original Lisa.

The microdisk drive also allows the Lisa 2 series to take advantage of the large software base being created for Macintosh, in addition to Lisa programs, available immediately in the new 3 1/2-inch format.

Software on the high-speed 3 1/2-inch microdisks is protected by a plastic case small enough to carry in a shirt pocket. The small, durable microdisks provide 400 kilobytes of storage--more than a typical 5 1/4-inch floppy diskette.

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"The Lisa 2 series are Apple's most powerful computers, both in terms of memory and performance," said E. Floyd Kvanne, Apple's executive vice president for marketing and sales. "They are especially useful to business users who need a powerful yet easy-to-use system with substantial memory with the capability for expansion. Combined with the software-compatible Macintosh, the Lisa 2 series offers substantial value for all businesses—small, medium, and large."

Lisa 2 Series Features

The Lisa 2, Lisa 2/5 and Lisa 2/10 incorporate the sophisticated, easy-to-use features pioneered by Lisa: pictorial "icons" and screen "windows" to simulate the familiar desktop working environment; a "mouse" pointing device with which a user directs the machine; and high-quality graphics and print output.

Like the original Lisa, the computers in the Lisa 2 series are exceptionally easy to learn and are designed for use in a broad range of general business tasks as well as specialized applications in such fields as engineering and architecture.

The new Lisa 2 has 512 kilobytes of random access memory (RAM) and one built-in, 3 1/2-inch, 400-kilobyte microdisk drive. The computer's memory can be expanded to 1 megabyte by adding another 512 kilobytes of RAM, and storage can be increased with an external hard disk.

Lisa 2/5 is the same as the Lisa 2, but has an external 5-megabyte hard disk. The Lisa 2/10 has a built-in, 10-megabyte hard disk in addition to its expandable 512 kilobytes of RAM and microdisk drive.

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The Lisa 2 includes the Macintosh operating system, enabling it to run Macintosh software. In addition, the 2/5 and 2/10 have sufficient mass storage to run many third-party software packages and a wide range of programs based on the Unix operating system. When expanded to a full megabyte of RAM, the 2/5 and 2/10 can run the complete Lisa Office System with its integrated software. The Lisa Office System allows simultaneous operation of multiple Lisa programs, as well as cut-and-paste integration that lets users easily move information—text, numbers, and graphics—from one application to another.

Each of the three new products provides a price and performance combination suitable to a particular group of users. Priced at \$3,495, the Lisa 2 is targeted toward users wishing to run Macintosh software and take advantage of Lisa's 512 kilobytes of RAM, 12-inch screen and potential for expanded memory and mass storage. By contrast, Macintosh has 128 kilobytes of RAM and a 9-inch screen. The Lisa 2 comes with the Macintosh operating system software included.

The Lisa 2/5, at \$4,495, offers a low entry price for a machine with high storage capacity. With its 5-megabyte hard disk, the 2/5 can run Lisa and Macintosh software as well as a variety of third-party applications.

The Lisa 2/10 provides the higher storage capacity necessary for many office tasks and is priced at \$5,495.

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Wide Software Base

Lisa 2 users will have a broad variety of software from which to choose. Available from Apple immediately are the Lisa Office System (operating system) the Macintosh operating system (available in March), LisaWrite (word processing), LisaCalc (financial modeling), LisaDraw (free-form presentation graphics), LisaGraph (business graphics), LisaProject (project management tool), LisaList (list management), and LisaTerminal (terminal emulation). Programming languages available include Basic, Pascal and Cobol. Apple also produces two programming tools—QuickPort, which enables BASIC-Plus, COBOL, and Pascal programs to run virtually unchanged in a window on the Lisa desktop, and Toolkit/32, which uses Lisa to support the development of fully-integrated Lisa-like applications.

Further, a large number of Lisa software packages are being developed to run on the Lisa desktop by leading third-party vendors including such prominent firms as BPI System, Inc., makers of "General Accounting," Ashton-Tate, makers of "dBase II," Execucom Systems, makers of "IFPS," and Sorcim Corporation, makers of "SuperCalc 3."

In addition, a number of developers—including Open Systems, Inc., Santa Cruz Operations, Inc., and UniPress Software, Inc.—are working on multi-user applications that will run under the UNIX (TM) operating system.

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Moreover, the Lisa 2 series will benefit from the extensive software base being developed for Macintosh. Apple is providing the basic Macintosh software, such as word processing, graphics applications and programming applications. More than 100 developers are currently developing software for Macintosh and Lisa. These firms include Lotus Development Corp., Microsoft Corp., Software Publishing Corp., and Think Technologies. Apple expects approximately 500 software packages for Macintosh and Lisa to be available by the end of 1984, including productivity applications, educational tools, specialized applications (such as accounting packages) and games.

Price and Availability

The Lisa 2 computers are available in versions for the U.S. and France, Great Britain, West Germany and Italy.

U.S. suggested retail prices and availability are as follows

Lisa 2: \$3,495 (available in March)
Lisa 2/5: \$4,495 (now available)
Lisa 2/10: \$5,495 (available in March)
512 kilobytes of add-on memory: \$1,495 (available in early February)
Lisa 2/5 upgrade: \$595 (available in March and free until June 1)
Lisa 2/10 upgrade: \$2495 (available in May)

The following software packages are now available:

Lisa Office System: \$295
LisaList: \$195
LisaWrite: \$295
LisaCalc: \$295
LisaTerminal: \$295
LisaGraph: \$295
LisaProject: \$395
LisaDraw: \$395
Macintosh Operating System: \$195 (available in March)



APPLE MACINTOSH BACKGROUNDER

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INTRODUCTION

Before the 1930s, driving an automobile involved learning transmission shift patterns and synchronizing those patterns with the clutch pedal. That combination of coordination and expertise kept a number of people from using the automobile. But in the late 1930s, automobile manufacturers introduced the automatic transmission--a feature that put more people behind the wheel.

Personal computers have followed a similar course. From the Apple II through the IBM PC, personal computers have forced people to learn unfamiliar ways of doing familiar things. To operate personal computers, users had to learn about operating systems, study programming languages, decipher cryptic messages and perform tasks in ways very different from the manual tasks the application software was intended to improve. Learning to use these personal computers required a large investment of the individual's time. And there was generally a phobia surrounding the computer. As a result, a large number of potential users have stayed away from computers.

If the market for personal computers is to grow, people should not be forced to acquire special skills. When used to type a letter, for instance, the computer should resemble a typewriter. When used to prepare a diagram, the computer should function like a sketchpad. People want the computer to respond in ways that are familiar and consistent regardless of what it does. They are awaiting the computer equivalent of the automatic transmission.

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The Xerox 8010 Workstation (Star) was the first computer to embody features that attempted to make computers easy to use and understand. It offered a powerful "user interface" that simplified the system's operation. Symbols and graphics, rather than coded messages, represented the computer's different resources. And the Star used pointing technology--the "mouse"--to provide access to these resources. The Star made great strides toward using, learning, and understanding computers. But its dependence on a large network made Star impractical for small installations.

In January 1983, Apple Computer introduced its Lisa computer, a personal computer that improved the concepts used in Star and increase its simplicity and usefulness. Moreover, Lisa could be used as a stand-alone work station, so offices could start with one and add others as needed.

Now, Apple Computer's Macintosh computer takes the technology even further and incorporates it into a system that is competitive in price and size with systems using older technologies. Macintosh extends the family of Apple 32 SuperMicros begun with Lisa. Macintosh features Lisa Technology and a 32-bit microprocessor architecture in a transportable, desk-top personal productivity tool at a low price and with capabilities that make it appealing to a wide range of users

Macintosh is designed for the large untapped market of professionals, managers and students--those individuals who transform information and ideas into reports, plans, budgets and memos. Macintosh improves their productivity and the quality of their work, but does so without their having to learn unfamiliar skills. The Macintosh is, in effect, a desk-top appliance, offering its users increased productivity with a simple, straightforward user interface, much like a telephone or calculator.

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To do this Macintosh provides users with the familiar desk-top environment and objects such as file folders, calculators and notepads. The methods and objects are common to all applications. Each application is similar to the task it is designed to enhance, and all applications are accessed in the same way.

This makes Macintosh easy to learn. Apple market research has shown that personal computers based on existing technologies require 20 to 40 hours to master. In contrast, Macintosh can be learned in a fraction of that time--typically a few hours.

Apple has designed the Macintosh to fit easily into its user's work routine. The Macintosh can be used as an electronic notepad, for example, to prepare letters, memos or other documents. With it, the user can perform financial analysis on department budgets, draw graphic presentations and prepare working visuals for overhead transparencies. A Macintosh also can file those documents so they can be retrieved and reworked as required. Moreover, Macintosh quickly and easily combines text and graphic information into a single document.

WHO WILL USE MACINTOSH?

Macintosh is aimed at managers, business professionals and students. These people process information in order to prepare, for example, financial reports, business plans, company or departmental budgets or term papers. These people can be termed "knowledge workers."

According to figures from the U.S. Bureau of Labor Statistics, white-collar workers in the services, trade and manufacturing-industry sectors have made up nearly 75 percent of the total white-collar work force since 1970. They will continue to do so through 1990, when there will be almost 58.4 million white-collar employees, or knowledge workers. Today, there are about 25 million knowledge workers in the United States.

The battle among these companies for the knowledge worker's desk top is expected to result in a 60 percent annual growth rate for the desk-top computer market, according to the Yankee Group. Future Computing, of Richardson, Texas--an industry consulting firm--estimates that the market will grow to \$15 billion by 1986 from a 1982 total of \$2.7 billion.

Apple expects Macintosh to be purchased by three major groups: users in businesses, university students and home users. Apple anticipates that in 1984 business users will make up 70 percent of Macintosh sales, with students and home users accounting for 20 and 10 percent, respectively.

MACINTOSH: AN ADVANCED PERSONAL PRODUCTIVITY TOOL

Macintosh, like Lisa, is a new kind of personal computer. It mimics the desk top and familiar working methods to establish a new, more comfortable relationship between the user and the computer.

Personal computers that use current technologies present various and confusing interfaces each time the user changes applications. Macintosh does not. Familiarity and consistency are its keys. Macintosh applications offer methods of performing tasks that the user already knows and, regardless of the task, the user approaches each application in the same manner. In this way, portions of documents created in one application can be cut-and-pasted into any other application.

At the heart of Macintosh is a 32-bit microprocessor, the Motorola MC68000. The microprocessor's 32-bit architecture and speed support the Macintosh high-performance graphics-based user interface. Macintosh uses a 9-inch, high-resolution (512 by 342 pixels) bit-mapped display.

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The Macintosh toolbox, the software that implements its user interface, has more than 480 separate software routines and is stored in 64 kilobytes of read-only memory built into every Macintosh computer. System main memory contains 128 kilobytes--enough room for more than an eighth of a million characters.

ITEMS ON A DESK TOP

The Macintosh user works with graphic representations--"icons"--of familiar office objects such as file folders, trash cans and stacks of paper. These are displayed on the Macintosh screen. The icons also represent task--writing, moving documents, storing documents or throwing documents away. Using a mouse, a palm-size device that positions the screen pointer, the user points to a desired function and selects it by pushing the button on the mouse.

The Finder is the application that allows users to organize their data, documents and tasks just as the user would on a desk in the office. Icons appear as documents, folders or disks with their titles appearing next to them. To gain access to a document, users need only select the appropriate icon and open the document. When a document is saved, it reverts back to an icon and is stored in its original location. Users may therefore organize files in any way they choose. The user's desk top includes such desk accessories as a calculator and a notepad. These are mini-applications that run concurrently with any application program. These desk accessories are open ended, meaning that Apple or third-party software developers may offer additional ones in the future.

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Each application has a menu bar appearing at the top of the display screen, which informs the user of the various operations, or tools, available for that particular application. Once an application has been selected, options for performing specific tasks appear through a pull-down menu. For example, before printing a document, a user can change such features as font style and size, margin justification and line spacing.

Macintosh windows--display screens within the larger screen--can appear on the desk top to display information. Using several of the Macintosh windows, a user can view the contents of several files at once. The information in a window can be a user's document, an error message or a request for more information. Any number of windows can be displayed on the Macintosh desk at the same time. When several file folders are stacked on top of each other to conserve space, and as more windows are placed on the Macintosh desk, the windows overlap. Those in front partially cover those behind. The sizes of the windows can be changed and windows can be split to show different parts of one document.

Information from one window, or application, can be moved to another. This "cut-and-paste" feature is useful for preparing reports that require both text and graphic data, each of which may have been prepared originally at another time in another application.

Application software and information are stored on the small diskette in the Macintosh computer's built-in 3 1/2-inch disk drive. The diskette can store up to 400 kilobytes of data, or about 100 double-spaced typewritten pages of information. In addition,, the diskette is small enough to fit in a shirt pocket and is protected by a hard plastic case. Another 400 kilobytes of storage are available with an optional external floppy disk drive.

Macintosh also supports Apple's interconnect strategy, AppleBus. A small local equipment-sharing bus, AppleBus lets Macintosh and Lisa 2 users share such peripherals as printers and disk drives via standard twisted-pair cable.

Macintosh's data-communications capabilities give its users low-cost access to information stored in mainframe-computer data bases. To do this, Macintosh can emulate--function as--a terminal in a mainframe communications network. Macintosh currently can emulate a variety of popular terminals, including the VT-100, VT-52, and Teletype for non-IBM mainframe communications, and the IBM 3277 and 3278 terminals via the AppleLine product.

Macintosh was designed to conform easily to each countries' local requirements and marked internationally. For example, the Macintosh user interface can display the date in a month-day-year format for the United States or it can be changed to day-month-year for Europe.

Additionally, all connectors on the Macintosh cabinet are identified with symbols recognized internationally, rather than with words. This simplifies attaching printers or additional mass-storage devices regardless of where it is used . Further, Macintosh ROM uses no English code, making it easy for a translator to adapt the software to any language. This can be accomplished within a few hours.

THE MACINTOSH MARKET ENVIRONMENT

Every personal-computer manufacturer is aware of the importance of software to the success of its product. Personal-computer vendors, however, face a serious dilemma--one that could make or break their product.

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Future Computing said that independent-software authors write software for a personal computer based on the number of units of the hardware that have been sold. It is difficult, however, to sell the hardware without the software.

Knowing this, personal computer vendors must introduce their hardware with a minimum, yet vital, amount of software. Apple is introducing the Macintosh with what it believes are two of the most important software packages to make the hardware immediately useful: MacWrite--a word processor--and MacPaint--an illustration graphics package. Microsoft Corp.'s Multiplan spread-sheet program is immediately available as well.

One of Apple's design goals for Macintosh was to produce a low-cost, powerful personal computer with built-in Lisa Technology. Apple believes it has done this by building into Macintosh all the basic hardware requirements and by providing a way to expand the system through software.

Apple is supporting the work of independent software vendors to develop Macintosh programs. The program was begun more than two years ago and continues strongly. Apple expects that its developer program will make at least 500 software packages available for Macintosh by the end of the year. Currently, Lotus Development is rewriting its popular Lotus 1-2-3 for Macintosh, and Microsoft Corp. executives say they expect nearly 50 percent of their company's application revenues in 1984 to come from Macintosh software. Currently, more than 100 major software and peripheral vendors are developing packages for Macintosh, including Software Publishing Corp., Continental Software, Ashton-Tate and Sorcim Corp.

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Software from these major developers will spur Macintosh sales in two of its primary markets--small--and medium-size businesses. To reach these business customers, Apple will sell Macintosh through the 3,000 dealerships already selling Apple products. The company expects that nearly 85 percent of Macintosh sales will come through retail channels.

Apple's next major market for Macintosh is higher education. To encourage use of Macintosh among college students, Apple is entering into sales relationships with prominent U.S. colleges and universities under which many will develop courseware on Macintosh. Software and other key developments made at each institution will be shared with the others and with Apple. Twenty-four leading institutions, including Harvard, Brown and Stanford universities, the University of Michigan and the University of Chicago, have joined the Apple University Consortium.

AUTOMATED PRODUCTION

Before the end of this year, according to industry analyst Jean Yates of Yates Ventures in Palo Alto, California, worldwide sales of Macintosh could total 350,000 units this year, with 70 percent of sales going to business, 20 percent to colleges and universities and 10 percent to home users. A \$20-million, automated factory designed to build computers in the millions will handle the expected high demand for Macintosh. It is located in Fremont, California.

Apple's Macintosh factory is a 160,000-square foot facility that uses some of the most advanced production techniques and equipment. A key feature of the new Macintosh factory is the material flow system. The factory has embraced a "just-in-time" inventory philosophy. Parts will be received daily, so just enough components are on hand to produce enough systems to meet current demands. In this way, inventory costs are minimized.

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Before the computers enter the factory manufacturing cycle, they are tested at the vendors' facilities. Apple's vendors have committed to supply Apple with 100-percent defect-free parts. All integrated circuits, for example, go through a 100 percent burn-in test. Each part is supplied by one to four qualified vendors. Apple will be receiving the finest components for its production.

The factory employs fewer than 300 people, 200 of whom are directly involved in manufacturing, the rest in engineering and administration.



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FOR IMMEDIATE RELEASE

APPLEMOUSE II NOW AVAILABLE FOR APPLE II COMPUTERS

CUPERTINO, Calif.--March 22, 1984--Apple Computer's AppleMouse II and a new software package for creating graphic designs are now available to owners of Apple^R II personal computers.

A mouse is a pointing device than can be used instead of a keyboard to select computer operations and modify information displayed on the screen. Apple's LisaTM computer, introduced last year, ignited broad interest in the mouse among computer owners, software developers and other computer manufacturers. The Lisa, as well as the recently-introduced Macintosh computer, are designed to be almost completely controlled by a mouse, one of the things that makes them easier to use than conventional computers.

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"The market's response to mouse technology clearly indicated that computer users were ready for input devices that offer greater flexibility than a keyboard," said Del Yocam, vice president and general manager of the Apple II division. "The mouse option opens up a new dimension of utility on our Apple II product line and again demonstrates Apple's commitment to enhance the value of its products with new technology."

AppleMouse II is packaged with MousePaint software that uses the mouse to design charts, diagrams, free-hand drawings and other visual aids for reports and presentations. Users can insert text in a drawing and can choose from a variety of character fonts and fill patterns. MousePaint simulates bit map graphics to support the Apple II's high resolution capabilities.

Independent software developers are writing applications that take advantage of the mouse. Apple is offering these developers a toolkit to help write these applications. Most future Apple software programs for the Apple II family will offer the mouse as an option.

AppleMouse II is available now at authorized Apple dealers for \$149. The mouse works with any Apple II, Apple II Plus or Apple IIe personal computer. The MousePaint software requires at least 64 kilobytes of internal memory.

Apple also is developing a mouse to work with Apple III and Apple III Plus personal computers.



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FOR IMMEDIATE RELEASE

APPLE COMPUTER ANNOUNCES 300 AND 1200 BAUD MODEMS

CUPERTINO, Calif.--February 20, 1984--Apple Computer today announced two modems, a 300-baud model and a 1200-baud model. Each modem is a compact unit which can fit under a standard telephone and is fully compatible with all Apple II, Apple III, Macintosh and Lisa personal computers.

Using an Apple computer, standard telephone equipment and an Apple modem, business professionals can transmit and receive data files, electronic mail and computer programs to and from other personal computers, minicomputers and mainframes. In addition, home users can perform home banking transactions, and tie into information services such as CompuServe, Dow Jones News/Retrieval and The Source.

The new modems are command compatible with Hayes Smart Modems and work with a variety of communications software packages on the market, including ASCII Express, Data Capture, Access III, VisiTerm, Z-Term and Transcend 1,2,3.

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Both modems provide built-in auto-dial and auto-answer functions, so an unattended Apple computer can automatically initiate or receive data transmissions. This feature enables Apple users to receive messages when they are away from their computers and to transmit information at night when telephone rates are lower.

The Apple Modem 1200 can operate at a 300-baud rate, as well as at a 1200-baud rate. The Apple Modem 300 works at 300-baud and 110-baud rates.

The modems use an RS-232C serial interface with a 9-pin connector. A serial interface card is required to connect one of the modems to an Apple II. The modems plug directly into the built-in serial port of any Apple III, Apple III Plus, Macintosh or Lisa computer.

Each modem comes with an accessory kit that contains an installation manual, a user's manual and the connector cables designed to support the Apple computer system that the customer uses. Apple also is offering Apple II users an optional accessory kit that includes a serial interface card.

In addition, the modem accessory kits for Apple II and Apple III computers include a menu-driven terminal program that allows users to dial into information services such as CompuServe and The Source. The Apple II terminal program works with Apple II Plus and Apple IIe computers with at least 64 kilobytes of internal memory. The Apple III program works with any Apple III or III Plus.

The new modems also are packaged with offers from both CompuServe and The Source. With the purchase of either modem, customers are eligible for a free demonstration of CompuServe and a subscription offer to The Source.

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The Apple Modem 300 and Apple Modem 1200 with accessory kits for all Apple personal computers will be available in March from U.S. authorized Apple dealers.

The Apple Modem 300 has a U.S. suggested retail price of \$225; if the optional accessory kit that includes the serial interface card is purchased, the Apple Modem 300 sells for \$299. The Apple Modem 1200 carries a U.S. suggested retail price of \$495; with the optional accessory kit containing the card, the price is \$570. Both modems can be purchased using the Apple Credit Card.

The modems come with Apple's standard 90-day warranty, and Apple's extended service plan, AppleCareTM, also is available.



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FOR IMMEDIATE RELEASE

NEW DOT MATRIX PRINTER FROM APPLE COMPUTER
SUPPORTS HIGH RESOLUTION GRAPHICS

CUPERTINO, Calif.—February 20, 1984—Apple Computer has introduced a new dot matrix printer designed especially for reproducing high resolution graphics at fast speeds. Called the Imagewriter, it is fully compatible with Apple's LisaTM, MacintoshTM, Apple^R III and Apple II personal computers.

The Imagewriter prints high resolution graphics at a rate of up to 180 characters per second (cps), and full text up to 120 cps. The new printer utilizes bit map graphics technology to support the Lisa computer's graphics capabilities.

The Imagewriter uses a standard RS-232-C serial interface, so it will connect directly to the built-in serial port of any Apple III, Macintosh or Lisa computer. Apple's Super Serial Interface Card connects it to the Apple II Plus or Apple IIe.

The Imagewriter's case acts as an acoustical insulator, reducing the printer's operational noise to less than 53 dB(A), a sound level lower than background conversation. The case was designed to aesthetically complement other Apple products.

"The Imagewriter provides a lower operating noise level, faster printing speed and greater compatibility with Apple II and Apple III software than our earlier Dot Matrix Printer," said Lauryn Jones, printer product manager for Apple Computer. "When price and performance are considered, the Imagewriter is a better value, especially for Apple III, Macintosh or Lisa users because they don't have to purchase an additional interface card."

The Imagewriter prints in a 7 x 9 dot matrix and features eight character fonts. Users can design up to 175 additional characters. Various fonts, underscoring, and sub- and superscripts can be mixed in the same printed line.

The new printer provides variable resolution from 72 to 160 dots per inch, variable pitch from 10 to 17 characters per inch, variable line spacing from 1/6 of an inch to 1/144 of an inch, and proportional font and spacing.

The Imagewriter uses either friction-feed or adjustable-width pin-feed tractors and accommodates a range of paper sizes from 3 to 10 inches wide. It uses single sheets of paper, fan-fold continuous forms, roll stock and precut labels. Up to four copies can be printed at a time.

Each printer comes with an accessory kit that contains the appropriate connector cables, a user's guide, an applications manual and software for printing high resolution graphics.

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As a second generation enhanced model of the Dot Matrix Printer, the Imagewriter replaces the first generation model. The Dot Matrix Printer will continue to be available until existing inventory is exhausted.

The Imagewriter is available now from authorized Apple dealers worldwide. Its U.S. suggested retail price is \$595.

The Imagewriter carries Apple's standard 90-day warranty, and the AppleCareSM Carry-In Service Plan is available for coverage beyond the 90-day period.



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FOR IMMEDIATE RELEASE

NEW APPLE DUAL-DISK DRIVE NOW AVAILABLE
FOR APPLE II COMPUTERS

CUPERTINO, Calif.—January 19, 1984—A new floppy disk drive unit which contains two half-high, 140-kilobyte drives side-by-side in a single case was introduced today by Apple Computer. Called Duodisk, the new drive offers compact styling, improved technology and full compatibility with Apple II software at a lower price than two separate Disk II drives.

Duodisk sets a new standard of economy for Apple II users, meeting the dual-drive configuration needed for many software programs, simple back-up and ease of use. This new drive is suited to the professional, small business, office, higher-level education and developer markets where two drives are required for most applications.

Duodisk is exactly the width of the Apple II and can sit conveniently between the computer and monitor. Its case was designed to complement the Apple II and the Monitor II, thereby creating an integrated system look.

Technical improvements include a new disk eject mechanism and an advanced head positioning mechanism which gives a more precise reading of half-tracks.

Duodisk comes with a controller card that connects it to any Apple II, Apple II Plus or Apple IIe. It is operationally identical to the Disk II floppy disk drive and runs all Apple II software.

Price and Availability

Duodisk is available now from all authorized Apple dealers worldwide and carries a U.S. suggested retail price of \$795. For comparison, it would cost \$940 to purchase two Disk II's and a controller card.

Duodisk is covered by Apple's standard 90-day warranty. Apple's extended service plan, AppleCareTM, is available for coverage beyond the first 90 days.



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FOR IMMEDIATE RELEASE

COLOR PLOTTER NOW AVAILABLE FROM APPLE COMPUTER

CUPERTINO, Calif.—January 7, 1984—Apple Computer has introduced a multi-color plotter for its Apple^R II and Apple III personal computers that produces presentation-quality graphs, charts, drawings and graphic designs on either paper or overhead transparencies.

The Apple Color Plotter, Model 410, is a versatile tool for anyone who gives presentations or needs to produce printed copies of multi-color graphics created with a personal computer.

—Accountants, bankers, stockbrokers and other financial analysts can use the plotter to transform numerical data into multi-color graphics, making the data easier to analyze and understand.

--Drafters, architects and engineers can develop high-quality outputs of their designs that are suitable for reports and presentations.

--Teachers can create classroom visual aids with the plotter to graphically represent concepts and numerical information.

--Students using Apple Logo and the plotter in a classroom can reproduce "turtle graphics" drawings on paper, so they can take home examples of their work.

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The Apple Color Plotter is compatible with Apple Business Graphics, Apple Logo and many other software programs which utilize the high-resolution, multi-color graphics capabilities of the Apple II and Apple III.

The plotter features four color pens that are interchanged automatically during operation. Commands given to the plotter by the graphics software determine pen selection, so a user does not need to stop the plotter's operation to change pens.

Designed for both plotting accuracy and speed, the plotter provides 0.004-inch resolution, 0.008-inch repeatability and 3.94 inches-per-second plotting speed. Its variable-width plotting bed and adjustable pinch roller mechanism permit a wide choice of media sizes up to 11" x 17".

The Apple Color Plotter uses a standard RS-232C serial interface and will connect to any personal computer that supports this interface. The plotter connects directly to the Apple III's built-in serial port. Apple's Super Serial Interface Card connects it to the Apple II, Apple II Plus, or Apple IIe.

An accessory kit and a multi-pen capper also are included with each plotter. The kit contains a user's operating manual, an installation manual, connector cables, one 50-sheet package of 8 1/2 x 11-inch plotter paper and eight pens in different colors for paper printouts. Designed for convenient pen storage when the plotter is not being used, the multi-pen capper allows all four pens to be capped in a single motion.

A complete line of Apple plotter supplies is available for separate purchase, including four types of pens in eight colors, two sizes of paper, paper-backed transparencies and the multi-pen capper.

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The Apple Color Plotter is available now from U.S. authorized Apple dealers and through Apple's educational state buy programs. The U.S. suggested retail price for the plotter is \$995. The plotter carries Apple's standard 90-day warranty, and Apple's extended service plan, AppleCareTM, also is available.



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FOR IMMEDIATE RELEASE

APPLE COMPUTER ANNOUNCES INTEGRATED SOFTWARE PACKAGES
FOR APPLE II AND APPLE III COMPUTERS

CUPERTINO, Calif.--November 28, 1983--New integrated software for Apple^R II and Apple III computers combines word processing, data base management and financial modeling--the productivity tools used most often by personal computer owners--into a single program.

Called AppleWorksTM, the product for the Apple II will be marketed by Apple Computer beginning in March, 1984. The Apple III product is called III E-Z Pieces, and will be available in January, 1984 from Haba Systems, Inc., a Van Nuys, Calif. developer of Apple-compatible software and peripheral equipment.

Designed for people who require several productivity tools in their work, AppleWorks and III E-Z Pieces can be used in a business or home environment. Each function operates with the same speed as many stand-alone applications, and the program provides three levels of integration that further increase efficiency for the user:

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--Commands mean the same or similar things in each application, which can reduce learning time.

--With few keystrokes, users can move freely among files in any of the three applications, eliminating time-consuming swapping of disks found in other programs. Up to 12 files can be contained in memory at once.

--Users can easily move information among files produced by the same application or from any file to a word processing file, using the program's "cut" and "paste" functions.

Applications Include Most Useful Features

The word processing application displays documents on the screen as they will appear when printed, including centering, indented text and page breaks. It incorporates advanced text processing features such as proportional spacing, superscripts and subscripts, boldface characters, and find and replace capabilities.

The spreadsheet program provides a large work area of 999 rows by 127 columns for financial models. Program features include precise numerics accurate up to 15 digits, variable column widths, extensive cell formatting commands and row sorting. AppleWorks and III E-Z Pieces can read VisiCalc^R data files and can read and write DIFTM files.

The data base manager is similar to Apple's Quick FileTM data management system. Users can arrange up to 30 categories of records in alphabetic, numeric, date or time order. The program is memory-based, so sorting is fast--for example, using AppleWorks, 800 records will sort in ten seconds. The built-in report function can create and print reports in either table or label formats. The program can read Quick File data files and can read and write DIFTM files.

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AppleWorks and III E-Z Pieces include a "Desktop Manager" that handles utility functions such as loading and saving files, formatting disks and specifying printer information. The desktop manager is menu-driven for easy use. Also, a helpful interactive training disk comes with AppleWorks.

AppleWorks is based on ProDOS, Apple's new operating system for the Apple II that is compatible with the Apple III Sophisticated Operating System (SOS). As a result, both AppleWorks and the SOS-based III E-Z Pieces can use mass storage systems, including Apple's five-megabyte ProFileTM hard disk, and data files can be used interchangeably between Apple II and Apple III computers.

System Requirements, Prices and Availability

AppleWorks requires an Apple IIe personal computer with 64K bytes of memory and an 80-column card, one floppy disk drive and a monitor. Apple's Extended 80 Column Card for the IIe, which provides an additional 64K bytes of memory, and a printer are recommended.

AppleWorks will be available in March from authorized Apple dealers worldwide. Its U.S. suggested retail price will be \$250. German, French and Italian versions of AppleWorks will be introduced in mid-1984, with additional languages to follow.

III E-Z Pieces requires an Apple III or Apple III Plus computer system with at least 128K bytes of internal memory. It will be available in January, 1984 and will carry a U.S. suggested retail price of \$295.



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NEW LINE OF TECHNICAL PRODUCTS
FROM APPLE COMPUTER SUPPORTS DEVELOPERS

CUPERTINO, Calif.--November 28, 1983--Apple Computer has introduced a series of technical products designed to help developers create applications for Apple^R computers. Called Apple Workbench, the product line includes development tools and technical information for hardware and software developers.

"Apple has always encouraged third parties to develop applications for its computers," said Jerry Lieberman, Apple Workbench product manager.

"Now, through the Workbench product line, we are opening up our systems to developers even more to make hardware and software development for Apple computers as easy and productive as possible."

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The first group of Workbench products consists of six software packages for Apple II and Apple III computers:

--The DOS Programmer's Tool Kit provides the tools needed to program an Apple II computer in both assembly and Applesoft BASIC under DOS 3.3. Software utilities are included for developing and using special text animation character sets, as well as Boston Window, an Applesoft full-screen editor. This package is available now for \$75.

--The ProDOS Technical Reference Manual explains how to develop applications using the advanced features of ProDOS, Apple's new operating system for the Apple II family. A diskette is included that contains an interactive program to allow programmers to test ProDOS function calls from the keyboard. It is available now for \$25.

--The ProDOS Assembler Tools package contains the software utilities needed to program and debug an Apple II computer in assembly language under ProDOS. The ProDOS Technical Reference Manual is recommended for use with this package. This product will be available next month for \$50.

--Apple Pascal Numerics provides units that allow programmers to use single, double and extended-precision real and integer numbers in Apple Pascal for the Apple II and the Apple III. The package incorporates full IEEE-standard numerics and includes a variety of mathematical functions. It is available now for \$35.

--The Apple III Pascal Tool Kit helps programmers develop Pascal programs on an Apple III computer. It includes utilities for performing programming functions such as compiling Pascal code, comparing data text files, designing a good user interface to the program, and sorting directories. This package will be available next month for \$125.

--Pronto: The Apple III Pascal Debugger enables developers to control the execution of Apple III Pascal programs. Users can debug while executing programs at full speed, and no recompilation is necessary. This product will be available next month for \$75.

The Workbench products are for technically-skilled developers who require little or no tutorial information. Technical reference materials provided with each Workbench product are in a loose-leaf format, with separate binders available now for \$8 so developers can organize the reference materials to fit their individual needs. The loose-leaf format was selected to facilitate updates

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Each product includes documentation and is purchased separately at authorized Apple dealers. More products will be added to the Apple Workbench series in the future.

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APPLE COMPUTER'S PROFILE MASS STORAGE SYSTEM
SUPPORTS APPLE II COMPUTERS

CUPERTINO, Calif.--November 28, 1983--Business professionals who use Apple^R II personal computers can now add the storage capacity and increased performance of ProFileTM, Apple Computer's Winchester-technology disk drive.

ProFile use with an Apple II is made possible by two new software products from Apple:

--ProDOS, Apple's new operating system for the Apple II, enables the computer to communicate with mass storage devices such as ProFile. ProDOS provides hierarchical file management and fast disk access, features that are particularly beneficial to ProFile users.

--The Apple Pascal Development System has been revised to support ProFile.

Any application based on ProDOS or Pascal (Version 1.2) can use ProFile. There are presently over 500 companies licensed to develop ProDOS-based applications for the Apple II.

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"ProFile makes an Apple II system more attractive to business customers who process large quantities of information," said Randy Reisinger, manager of the Apple II product line. "This new capability demonstrates Apple's commitment to continually adding products and capabilities for the Apple II to insure that it remains the most flexible computer in its class."

ProFile offers storage capacity up to the equivalent of 35 floppy diskettes--about 1200 single-spaced, type-written pages--and retrieves information ten times as fast as a conventional floppy disk drive.

New FCC Rating for ProFile

ProFile recently has been submitted to the Federal Communications Commission (FCC) as a Class B device, the rating required to operate a computer in a home environment.

"Many business people use Apple II's in their home offices as often as they use them at work," noted Reisinger. "The availability of an FCC-certified hard disk gives them one more reason to choose an Apple II."

Backup Capability

ProFile is packaged with Backup II, a software utility that backs up and restores files stored on ProFile. With Backup II, all stored files, even those too large for a single floppy diskette, can be transferred to and stored on back-up floppies.

If data needs to be restored on ProFile, Backup II users can restore just one file, a particular collection of files, or the entire contents from the back-up diskette. The utility also allows users to back up only those files which have been updated since the last time a backup was made, or since a specific date and time.

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System Requirements, Price and Availability

ProFile can be used with Apple II, Apple II Plus or Apple IIe computers that have 64 or more kilobytes of internal memory. In addition to Backup II, purchasers of ProFile for an Apple II will receive an interface card to connect ProFile to one of the computer's expansion slots and a software utility to manage Pascal files on ProFile.

ProFile for Apple II personal computers is available now from authorized Apple dealers worldwide. Its U.S. suggested retail price is \$1995.